REMARKS

Claims 1-12 are pending. Claims 1-2, 6-8, and 10-12 are amended. Applicant thanks the Examiner for indicating that claims 6 and 12 include allowable subject matter. Claims 6 and 12 have been re-written in independent form to include the limitations of the claims from which they depended. Those claims should be in condition for allowance.

The Office action rejected the claims on the following grounds:

- Claims 1-2 and 7-8 are rejected as unpatentable over the combination of Japanese unexamined patent application H5-133841 (1993) and Agrawal, Fiber Optic Communications Systems (1997);
- Claims 3-4 and 9-10 are rejected as unpatentable over the combination of the foregoing references and U.S. Patent No. 5,696,707 (Hentschel).
- Claims 5 and 11 are rejected as unpatentable over the foregoing references and Lerkvarnyu, "Moving Average . . ." (1998).

As discussed below, the applicant respectfully disagrees with these rejections.

The Law of Obviousness

A claimed invention is unpatentable due to obviousness if the differences between it and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person of ordinary skill in the art." 35 U.S.C. § 103(a).

As discussed by the Court of Appeals for the Federal Circuit, a proper conclusion of obviousness under 35 U.S.C. § 103 requires that there be some motivation in the prior art that suggests the claimed invention as a whole:

> [A]n Examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for

> piecing together elements in the prior art to defeat the patentablity of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentablity." [Citations omitted] To prevent the use of hindsight based on the invention to defeat patentablity of the invention, this court requires the examiner to show motivation to combine the references that create the case of obviousness.

In re Rouffet, 149 F.3d 1350, 1357; 47 USPQ2d 1453, 1457-1458 (Fed. Cir. 1998). As further explained by the Federal Circuit:

> Our case law makes clear that the best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of a teaching or motivation to combine the prior art references. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617. "Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight." Id.
>
> "When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references." In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998) (citing In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987)).

Ecolochem, Inc. v. Southern California Edison Co., 56 USPQ2d 1065, 1072-73 (Fed. Cir. 2000). The showing of the motivation to combine must be "clear and particular." *See, e.g., C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998); *Teleflex, Inc. v. Ficosa North Am. Corp.*, 63 USPQ2d 1374 at 1387 (Fed. Cir. 2002).

The Claimed Subject Matter is Patentable Over the Cited References

In the present case, there is no "clear and particular" motivation to combine the cited references. The pending application discloses a noise figure-measuring device that may be used,

for example, to prepare optical spectrum information of signal light from a light source and to calculate a noise figure generated by an optical amplifier.

Claim 1 recites, in part, an optical amplifier for amplifying the signal light from a light source at an appointed gain ratio, where the appointed gain ratio is determined by using a provisional ASE light level from the light source. The Office action states that it would have been obvious to combine the Shigematsu reference with Agrawal reference for a teaching of the gain ratio. That conclusion, however, is incorrect because neither reference suggests or teaches determining a gain ratio by using a provisional ASE light level from a light source as recited in claim 1. Independent claim 7 should be allowed for similar reasons.

The rejection of claim 2 is based on a consideration of the gain, G, as disclosed in the Shigematsu reference at line 3 of paragraph 20, as being equivalent to the coefficient limitation of claim 2. However, the gain calculated in the Shigematsu reference is significantly different from the coefficient limitation in claim 2. In particular, the Shigematsu reference calculates the gain, G, by comparing the peak value of the signal light power that is input into the amplifier with the peak value of output light power obtained from the amplifier. (Shigematsu, p. 19, lines 6-8) In contrast, claim 2 recites that the gain is calculated by subtracting a calculated provisional ASE light level from a peak value of the output light spectrum data and dividing this difference by a peak value of the input light spectrum that is neither disclosed or suggested by the cited reference.

The Office action states that claims 3-4 and 9-10 are rejected as unpatentable over the combination of the foregoing references and U.S. Patent No. 5,696,707 (Hentschel). The Hentschel et. al. patent discloses a technique for measuring the noise level in the presence of a signal. The technique, however, is based on calculating a difference function corresponding to the difference in noise level samples before and after detuning the signal as a function of wavelength. (Hentschel, col. 4, lines 33-42) As shown in FIG. 1 of the Hentschel reference, a controller 2 is coupled to a laser source 14, an amplifier test set 11, a power meter 22 and an optical spectrum analyzer 13. An optical signal from the amplifier 10 can directly be transmitted to the optical spectrum analyzer 13 (col. 3, lines 66 – col. 4, line 1) However, there is no

disclosure or suggestion that the optical spectrum analyzer 13 also receives a signal from the laser source 14. Furthermore, the Hentschel et. al. patent does not suggest or teach using spline interpolation for any subject matter other than an original and detuned signal.

The Office action state that claims 5 and 11 are rejected as unpatentable over the foregoing references and Lerkvarnyu, "Moving Average . . ." (1998). The Lervarnyu article concerns signal processing of ground-based laser radar. In particular, a moving average method is disclosed to determine a model of the signal that is obtained from a backscattering of laser energy by whole particle in the atmosphere. As further explained by the Federal Circuit, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. The references cited in the Office action do not suggest such a combination. Furthermore, there is no motivation for selecting the particular features from these cited references and combining them to obtain the claimed subject matter.

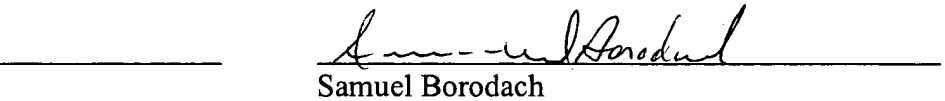
Conclusion

In view of the foregoing remarks, applicant respectfully requests reconsideration and withdrawal of the rejections, and allowance of the claims.

Please apply any charges or credits to deposit account 06-1050, referencing Attorney Docket No. 10830-079001.

Respectfully submitted,

Date: 1/26/04



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